

WHAT IS CLAIMED IS:

1. A lens-evaluating apparatus for evaluating a resolution of a lens, comprising
a check sheet formed with a resolution-measuring test pattern;
5 a light source for irradiating light on the check sheet to introduce an image light
including the test pattern to the lens;
a screen to which the image light irradiated by the lens is projected;
an image sensor for taking an image of the test pattern displayed on the screen;
an image import device for importing the image taken by the image sensor to
10 generate an image signal; and
a signal processor including a resolution evaluation value calculator that
arithmetically operates the resolution evaluation value based on the image signal
outputted by the image import device,
wherein the image sensor is provided with a light adjuster for adjusting an
15 amount of light incident on the image sensor, the light adjuster being controlled based on
a control signal from the signal processor.

2. The lens-evaluating apparatus according to claim 1, wherein the resolution
evaluation value calculator arithmetically operates the resolution evaluation value based
20 on a background luminance value of a part of the check sheet having no test pattern
formed thereon, a maximum luminance value and a minimum luminance value in the test
pattern image.

3. The lens-evaluating apparatus according to claim 2, wherein the resolution
25 evaluation value calculator calculates the resolution evaluation value (MTF) by a formula
of

$$\text{MTF} = (\text{Imax} - \text{Imin}) / (\text{Io} * 2 - \text{Imax} - \text{Imin})$$

30 where the background luminance value is represented as Io, the maximum luminance
value is represented as Imax and the minimum luminance value is represented as Imin.

4. The lens-evaluating apparatus according to claim 1, further comprising an image sensor moving mechanism that moves the image sensor along a surface of the screen, the signal processor further comprising: an image sensor controller for controlling movement of the image sensor along an outer periphery of the projected image projected on the screen;
- 5 a peripheral image sensor for acquiring a peripheral image of the projected image at a predetermined position with the image import device using the image sensor while moving the image sensor by the image sensor controller; and
- a distortion aberration calculator for calculating a distortion aberration of the projected image based on the peripheral image of the projected image acquired by the peripheral image sensor.
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5. The lens-evaluating apparatus according to claim 4, the check sheet further comprising a frame portion formed adjacent to an outer periphery of a formation area of the projected image projected on the screen.
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6. The lens-evaluating apparatus according to claim 4, further comprising an illumination sensor for detecting an illumination at a predetermined first position in the projected image.
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7. The lens-evaluating apparatus according to claim 6, wherein the resolution evaluation value calculator arithmetically operates an input level value based on the background luminance value, the maximum luminance value and the minimum luminance value and the input level value is acquired by the resolution evaluation value calculator at a plurality of positions in the projected image including the first position where the illumination is detected, and
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- wherein the signal processor includes an in-plane illumination calculator for calculating an in-plane illumination of the entire projected image by calculating the illumination of a second position other than the first position based on the illumination at the first position detected by the illumination sensor, the input level value at the first position calculated by the resolution evaluation value calculator and the input level value at the second position.
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